

1/24

		Formula	MW
E-2560	H-Val-OH	$C_5H_{11}NO_2$	117.15
E-3250	H-[ $^{15}N$ ]Val-OH	$C_5H_{11}^{15}NO_2$	118.15
F-2180	H-D-Val-OH	$C_5H_{11}NO_2$	117.15
F-3025	H-DL-Val-OH	$C_5H_{11}NO_2$	117.15
E-3810	H-Val-ally ester p-tosylate	$C_8H_{16}NO_2 \cdot C_7H_8O_3S$	330.43
E-2565	H-Val-NH <sub>2</sub> · HBr	$C_5H_{12}N_2O \cdot HBr$	197.08
E-2570	H-Val-NH <sub>2</sub> · HCl	$C_5H_{12}N_2O \cdot HCl$	152.63
E-2585	H-Val-NHtBu	$C_9H_{20}N_2O$	172.27
E-2600	H-Val-p-nitrobenzyl ester · HBr	$C_{12}H_{16}N_2O_4 \cdot HBr$	333.19
E-2590	H-Val-OtBu · HCl	$C_9H_{19}NO_2 \cdot HCl$	209.72
F-3170	H-D-Val-OtBu · HCl	$C_9H_{19}NO_2 \cdot HCl$	209.72
E-2575	H-Val-OBzL · HCl	$C_{12}H_{12}NO_2 \cdot HCl$	243.74
E-2580	H-Val-OBzL · p-tosylate	$C_{12}H_{17}NO_2 \cdot C_7H_8O_3S$	379.48
F-3500	H-D-Val-OBzL · p-tosylate	$C_{12}H_{17}NO_2 \cdot C_7H_8O_3S$	379.48
E-1825	H-Val-OEt · HCl	$C_7H_{15}NO_2 \cdot HCl$	181.65
E-2595	H-Val-OMe · HCl	$C_6H_{13}NO_2 \cdot HCl$	167.64
F-3160	H-D-Val-OMe · HCl	$C_6H_{13}NO_2 \cdot HCl$	167.64
C-3700	Z-N-Me-Val-OH	$C_{14}H_{19}NO_4$	265.31
C-2805	Z-Val-OH	$C_{13}H_{17}NO_4$	251.28
C-2810	Z-D-Val-OH	$C_{13}H_{17}NO_4$	251.28
C-2815	Z-Val-NHtBu	$C_{12}H_{26}N_2O_3$	306.41
C-2830	Z-Val-ONp	$C_{19}H_{20}N_2O_4$	372.38
C-2820	Z-Val-OSu	$C_{17}H_{20}N_2O_4$	348.36
C-2825	Z-D-Val-OSu	$C_{17}H_{20}N_2O_4$	348.36

Fig. 1A

2/24

## Special Amino Acids and Amino Acid Derivatives

F-1190	H-Abu-OH
F-2440	H-Abu-NH <sub>2</sub> · HCl
F-3035	H-Abu-OtBu · HCl
F-3755	H-γ-Abu-OtBu · HCl
E-2660	Ac-p-aminohippuric acid
F-1015	Ac-p-amino-Phe-OMe
F-2275	Ac-p-bromo-DL-Phe-OH
F-3265	Ac-p-Bz-D-Phe-OH [Ac-D-Bpa-OH]
M-1935	Ac-Cys(farnesyl)-OH
F-2930	Ac-Cys(farnesyl)-OMe
F-1020	Ac-Dob(Boc)-OH
F-3175	Ac-4,5 dehydro-Leu-OH
F-1030	Ac-3,5-dinitro-Tyr-OEt
F-1010	DL-2-Acetylamino-6-N-Boc-amino-4-hexynoic acid · DCHA
F-2295	Ac-p-fluoro-DL-Phe-OH
F-3015	Ac-p-iodo-D-Phe-OH
F-2940	Ac-Met(O)-OH
F-2305	Ac-5-Me-DL-Trp-OH
F-2420	Ac-D-2-Nal-OH
F-1080	Ac-DL-propargyl-Gly-OEt
E-3060	H-Aib-OtBu
F-1160	H-allo-Ile-OH
F-1165	H-D-allo-Ile-OH
F-1170	H-DL-allo-Ile-OH

Fig. 1B

## REPLACEMENT SHEET

3/24

F-1175	H-allo-Thr-OH
F-1180	H-D-allo-Thr-OH
F-2635	H-DL-allo-Thr-OH
F-2545	H-allo-Thr-OMe · HCl
F-2540	H-allo-Thr(tBu)-OH
F-2560	L- $\alpha$ -Aminoadipic acid [L-2-Aminohexanedioic acid]
F-2575	D- $\alpha$ -Aminoadipic acid [D-2-Aminohexanedioic acid]
F-1185	DL- $\alpha$ -Aminoadipic acid [DL-2-Aminohexanedioic acid]
F-3150	L-2-Aminoadipic acid- $\delta$ -2-butyl ester [L-2-Aminohexanedioic acid- $\delta$ -2-butyl ester]
F-3130	L- $\alpha$ -Aminoadipic acid- $\delta$ -methyl ester · HCl [L-2-Aminohexanedioic acid- $\delta$ -methyl ester · HCl]
F-3800	1-Aminocyclopropane-1-carbohydroxamic acid · HCl
F-3805	1-Aminocyclopropane-1-carboxylic acid
F-1200	H-4-Amino-3,5-diodo-Phe-OH
F-1205	7-Aminoheptanoic acid
F-3480	4-Amino-1-methylimidazole-2-carboxylic acid-ethyl ester · HCl
F-3485	4-Amino-1-methylpyrrole-2-carboxylic acid methyl ester · HCl
F-1225	H-p-Amino-Phe-OH · HCl
F-2855	H-p-Amino-D-Phe-OH · HCl
F-1230	H-p-Amino-DL-Phe-OH
F-1235	DL- $\alpha$ -Aminopimelic acid [DL-2-Aminoheptanedioic acid]
H-3605	4-Aminopiperidine-4-carboxylic acid [H-Pip-OH]
F-2740	L-2-Aminosuberic acid [L-2-Aminooctanedioic acid/H-Asu-OH]

Fig. 1C

4/24

F-3315	D- $\alpha$ -Aminosuberic acid [D-2-Aminooctanedioic acid/H-D-Asu-OH]
F-3305	DL- $\alpha$ -Aminosuberic acid [DL-2-Aminooctanedioic acid/H-DL-Asu-OH]
F3675	H-3-Amino-Tyr-OH • 2 HCl [5-Aminopentanoic acid-benzyl ester • p-tosylate]
E-1700	n-Aminovaleric acid-benzyl ester • p-tosylate [5-Aminopentanoic acid-benzyl ester • p-tosylate]
F-1281	L-Azetidine -2-carboxylic acid
F-2285	Azetidine-3-carboxylic acid
F3075	H-p-Azido-Phe-OH
F-2490	H- $\beta$ -(3-Benzothienyl)-Ala-OH
F-2485	H- $\beta$ -(3-Benzathienyl)-D-Ala-OH
F-1215	Bestatin [(2S,3R)-3Amino-2-hydroxy-4-phenylbutanoyl-L-leucine]
F-2630	S-[2,3-Bis(palmitoyloxy)-(2RS)-propyl]-N-palmitoyl-(R)-Cys-OH
A-1135	Boc-Abu-OH
A-1175	Boc-D-Abu-OH
A-1140	Boc- $\gamma$ -Abu-OH
A-1145	Boc-Abu-ONp
A-3240	Boc-Abz-OH
A-2800	Boc-4-Abz-OH
A-4300	Boc-4-Abz-Osu
A2015	Boc-Aib-OH
A3825	Boc-Aib-Osu
A-3345	Boc-allo-Ile-OH
A-3735	Boc-D-allo-Ile-OH
A-1150	Boc- $\epsilon$ -aminocaproic acid
A-1155	Boc- $\epsilon$ -aminocaproic acid-Osu

Fig. 1D

## REPLACEMENT SHEET

5/24

A-1160	Boc-4-amino-3,5-diiodo-Phe-OH
A-1175	Boc-7-aminoheptanoic acid
A-1185	Boc-p-amino-Phe-OH
A-2980	Boc-p-amino-D-Phe-OH
A-3975	Boc-p-amino-Phe(Fmoc)-OH
A-4065	Boc-p-amino-D-Phe(Fmoc)-OH
A-1455	Boc-p-amino-Phe(Z)-OH
A-4370	1-Boc-4-aminopiperidine-4-carboxylic acid [H-Pip(Boc)-OH]
A-3310	Boc-11-aminoundecanoic acid
A-3405	Boc- $\delta$ -aminovaleric acid [Boc-5-aminopentanoic acid]
A-3870	Boc-p-azido-Phe-OH
A-4200	Boc-p-azido-D-Phe-OH
A-3540	Boc- $\beta$ -(3-benzothieryl)-Ala-OH
A-3695	Boc-p-bromo-Phe-OH
A-4205	Boc-p-bromo-D-Phe-OH
A-4490	Boc-p-tBu-Phe-OH
A-4485	Boc-p-tBu-D-Phe-OH
A-3295	Boc-p-Bz-Phe-OH [Boc-Bpa-OH]
A-3860	Boc-p-Bz-D-Phe-OH [Boc-D-Bpa-OH]
A-4325	Boc-p-carboxy-Phe(OtBu)-OH • DCHA
A-3860	Boc- $\beta$ -chloro-Ala-OH
A-1525	Boc-p-chloro-Phe-OH
A-2655	Boc-p-chloro-D-Phe-OH
A-1535	Boc- $\beta$ -cyano-Ala-OH

Fig. 1E

## REPLACEMENT SHEET

6/24

A-1540	Boc- $\beta$ -cyano-D-Ala-OH
A-4375	Boc-p-cyano-Phe-OH
A-3760	Boc- $\beta$ -cyclohexyl-Ala-OH
A-3840	Boc- $\beta$ -cyclohexyl-D-Ala-OH
A-2960	Boc- $\beta$ -cyclohexyl-Ala-OH • DCHA
A-2920	Boc- $\beta$ -cyclohexyl-D-Ala-OH • DCHA
A-4465	Boc-cyclohexyl-Gly-OH
A-4470	Boc-cyclohexyl-D-Gly-OH
A-3340	N-Boc-cyclohexylstatine [N-Boc-(3S,4S)-4-amino-5-cyclohexyl-3-hydroxypentanoic acid]
A-4150	Boc- $\beta$ -cyclopropyl-Ala-OH
A-3215	Boc-Dab-OH
A-4215	Boc-D-Dab-OH
A-4415	Boc-Dab-OtBu • HCl
A-4125	Boc-Dab-(Aloc)-OH
A-3480	Boc-Dab-(Boc)-OH • DCHA
A-3S20	Boc-Dab-(Fmoc)-OH
A-4230	Boc-D-Dab(Fmoc)-OH
A-2905	Boc-Dab(Z)-OH • DCHA
A-4260	Boc-D-Dab(Z)-OH • DCHA
A-3220	Boc-Dap-OH
A-3S90	Boc-D-Dap-OH
A-4115	Boc-Dap(Aloc)-OH
A-3475	Boc-Dap(Boc)-OH • DCHA
A-4130	Boc-Dap(bromoacetyl)-OH
A-4290	Boc-Dap(Dnp)-OH
A-4295	Boc-Dap(Dnp)-OSu

Fig. 1F

## REPLACEMENT SHEET

7/24

A-3S80	Boc-Dap(Fmoc)-OH
A-4235	Boc-D-Dap(Fmoc)-OH
A-3000	Boc-Dap(Z)-OH · DCHA
A-4265	Boc-D-Dap(Z)-OH · DCHA
A-3485	Boc-4,5-dehydro-Leu-OH · DCHA
A-1550	Boc-3,4-dehydro-Pro-OH
A-1555	Boc-3,5-dibromo-Tyr-OH
A-4220	Boc-3,5-dibromo-D-Tyr-OH
A-4045	Boc-3,4-dichloro-D-Phe-OH
A-1580	Boc-3,5-diiodo-Tyr-OH
A-4225	Boc-3,5-diiodo-D-Tyr-OH
A-1590	Boc-3,5-diiodo-Tyr-OMe
A-1585	Boc-3,5-diiodo-Tyr-OSu
A-1410	Boc-3,5-diiodo-Tyr(3'-bromo-Bzl)-OH
A-2570	Boc-3,5-diiodo-Tyr(2',6'-dichloro-Bzl)-OH
A-3065	Boc-p-fluoro-Phe-OH
A-2835	Boc-p-fluoro-D-Phe-OH
A-1605	Boc-p-fluoro-DL-Phe-OH
A-4320	Boc- $\alpha$ -(Fmoc-amino)-Gly-OH [Fmoc- $\alpha$ -(Boc-amino) Gly-OH]
A-4040	Boc-Homoarg-OH · HCl
A-3775	Boc-Homoarg(Et) <sub>2</sub> -OH
A-3780	Boc-D-Homarg(Et) <sub>2</sub> -OH
A-3935	Boc-Homoarg(NO <sub>2</sub> )-OH
A-3465	Boc-Homocit-OH
A-2870	Boc-D-Homocit-OH
A-3420	Boc-Homocys(MbzI)-OH

Fig. 1G

## REPLACEMENT SHEET

8/24

A-4255	Boc-D-Homocys(MbzI)-OH
A-3610	Boc-Homocys(Trt)-OH
A-1190	Boc-Homophe-OH
A-1195	Boc-D-Homophe-OH
A-2830	Boc-Homopro-OH
A-3125	Boc-D-Homopro-OH
A-4165	Boc-7-hydroxy-Tic-OH
A-4170	Boc-7-hydroxy-D-Tic-OH
A-1800	Boc-p-iodo-Phe-OH
A-3640	Boc-p-iodo-D-Phe-OH
A-1805	Boc-p-iodo-DL-Phe-OH
A-3815	Boc-isonipecotic acid [Boc-piperidine-4-carboxylic acid]
A-3715	Boc-N-Me-Abz-OH
A-2025	Boc-N-Me-allo-Ile-OH
A-3730	Boc-N-Me-D-allo-Ile-OH
A-2880	Boc-N-Me-p-chloro-D-Phe-OH
A-2070	Boc-N-Me-p-nitro-Phe-OH · DCHA
A-4495	Boc-p-Me-Phe-OH
A-4500	Boc-p-Me-D-Phe-OH
A-1965	Boc-Met(O)-OH
A-2885	Boc-Met(O <sub>2</sub> )-OH
A-4145	Boc- $\alpha$ -Me-DL-Val-OH
A-3225	Boc-1-Nal-OH
A-4305	Boc-D-1-Nal-OH
A-2850	Boc-2-Nal-OH
A-2575	Boc-D-2-Nal-OH

Fig. 1H



9/24

A-3110	Boc-Neopentylgly-OH
A-4210	Boc-D-Neopentylgly-OH
A-2125	Boc-p-nitro-Phe-OH
A-2130	Boc-p-nitro-D-Phe-OH
A-3645	Boc-Oic-OH [Boc-L-octahydroindole-2-carboxylic acid]
A-2965	Boc-Pen(Acm)-OH
A-2970	Boc-D-Pen(Acm)-OH
A-3660	Boc-Pen(MbzI)-OH · DCHA
A-3665	Boc-D-Pen(MbzI)-OH · DCHA
A-2900	Boc-Pen(Mob)-OH
A-3990	Boc-D-Pen(Mob)-OH
A-3650	Boc-Pen(NPys)-OH
A-3655	Boc-D-Pen(NPys)-OH
A-3850	Boc-Pen(Trt)-OH
A-3855	Boc-D-Pen(Trt)-OH
A-3915	Boc-pentafluoro-Phe-OH
A-3960	Boc-pentafluoro-D-Phe-OH
A-4385	Boc-p-phenyl-Phe-OH [Boc- $\beta$ -(4-biphenyl)-Ala-OH; Boc-Bip-OH]
A-4390	Boc-p-phenyl-D-Phe-OH [Boc- $\beta$ -(4-biphenyl)-D-Ala-OH; Boc-D-Bip-OH]
A-4100	N-Boc-phenylstatine [N-Boc-(3S,4S)-4-amino-3-hydroxy-5-phenylpentanoic acid]
B-3115	1-Boc-piperidine-4-Fmoc-amino-4-carboxylic acid [Fmoc-Pip(Boc)-OH]
A-3745	Boc- $\beta$ -(3-pyridyl)-Ala-OH
A-2855	Boc- $\beta$ -(3-pyridyl)-D-Ala-OH
A-4395	Boc- $\beta$ -(2-quinolyl)-Ala-OH
A-4400	Boc- $\beta$ -(2-quinolyl)-D-Ala-OH

Fig. 11

## REPLACEMENT SHEET

10/24

A-1180	N-Boc-statine [N-Boc-(3S,4S)-4-amino-3-hydroxy-6-methylheptanoic acid]
A-3945	Boc-L-thiazolidine-4-carboxylic acid [Boc-L-thioprolin]
A-3940	Boc-D-thiazolidine-4-carboxylic acid [Boc-D-thioprolin]
A-2290	Boc- $\beta$ -(2-thienyl)-Ala-OH
A-2295	Boc- $\beta$ -(2-thienyl)-D-Ala-OH
A-2300	Boc- $\beta$ -(2-thienyl)-DL-Ala-OH
A-3700	Boc-L-thiocitrulline-OtBu
A-4360	Boc-Thionoala-1-(6-nitro)benzotriazolide
A-4345	Boc-Thionoleu-1-(6-nitro)benzotriazolide
A-4355	Boc-Thionophe-1-(6-nitro)benzotriazolide
A-4365	Boc-Thionoser(Bzl)-1-(6-nitro)benzotriazolide
A-4350	Boc-Thionoal-1-(6-nitro)benzotriazolide
A-3070	Boc-Tic-OH
A-3075	Boc-D-Tic-OH
A-4090	Boc-D-Tpi-OH [Boc-D-1,2,3,4-tetrahydronorharman-3-carboxylic acid]
F-1305	H-p-Bromo-Phe-OH
F-3700	H-p-Bromo-D-Phe-OH
F-1310	H-p-Bromo-DL-Phe-OH
F-3790	H-p-tBu-Phe-OH
F-3795	H-p-tBu-D-Phe-OH
F-3250	n-Butyloxycarbonyl-Dap-OH
F-2800	H-p-Bz-Phe-OH [H-Bpa-OH]
F-2810	H-p-Bz-D-Phe-OH [H-D-Bpa-OH]

Fig. 1J

## REPLACEMENT SHEET

11/24

F-2345	Carbamoyl-DL-Ala-OH
F-1375	Carbamoyl- $\beta$ -Ala-OH
M-2240	Carbamoyl-Asp-OH $\cdot$ magnesium salt
F-2430	Carbamoyl-Leu-OH
Q-1140	$\beta$ -Carboline-3-carboxylic acid-ethyl ester
Q-1145	$\beta$ -Carboline-3-carboxylic acid-propyl ester
F-3590	H-p-Carboxy-Phe-OH
F-3585	H-p-Carboxy-Phe(OtBu)-OH
F-2700	L-Carnitine [(R)- $\beta$ -Hydroxy- $\gamma$ -(trimethylammonio)butyrate]
F-1425	H- $\beta$ -Chloro-Ala-OH
F-1430	H- $\beta$ -Chloro-Ala-OH $\cdot$ HCl
F-1435	H- $\beta$ -Chloro-D-Ala-OH $\cdot$ HCl
F-1440	H- $\beta$ -Chloro-DL-Ala-OH
F-2325	H- $\beta$ -Chloro-DL-Ala-OH $\cdot$ HCl
F-3380	H- $\beta$ -Chloro-Ala-NHOH
F-3465	H- $\beta$ -Chloro-Ala-OMe $\cdot$ HCl
F-1445	H-p-Chloro-Phe-OH
F-2520	H-p-Chloro-D-Phe-OH
F-1450	H-p-Chloro-DL-Phe-OH
F-2690	H-p-Chloro-D-Phe-OMe $\cdot$ HCl
F-1455	H-p-Chloro-DL-Phe-OMe $\cdot$ HCl
F-1460	H- $\beta$ -Cyano-Ala-OH
F-3610	H-p-Cyano-Phe-OH
F-2500	H- $\beta$ -Cyclohexyl-Ala-OH $\cdot$ HCl
F-2505	H- $\beta$ -Cyclohexyl-D-Ala-OH $\cdot$ HCl
F-3760	H-Cyclohexyl-Gly-OH $\cdot$ salt
F-3765	H-Cyclohexyl-D-Gly-OH $\cdot$ salt

Fig. 1K

## REPLACEMENT SHEET

12/24

F-2830	Cyclohexylstatine [(3S,4S)-4-Amino-5-cyclohexyl-3-hydroxypentanoic acid]
F-1470	H- $\beta$ -(1-Cyclopentenyl)-DL-Ala-OH
F-1465	H- $\beta$ -(1-Cyclopentenyl)-DL-Ala-OH
F-3470	H- $\beta$ -Cyclopropyl-Ala-OH
F-1475	L-Cycloserine
F-1480	D-Cycloserine
F-1485	DL-Cycloserine
F-3050	H-Dob-OH $\cdot$ 2 HCl
F-3055	H-D-Dob-OH $\cdot$ 2 HCl
A-3305	H-Dob(Boc)-OH
E-3360	H-Dob(Boc)-OMe $\cdot$ HCl
F-3040	H-Dop-OH $\cdot$ HCl
F-3045	H-D-Dop-OH $\cdot$ HCl
F-3420	H-Dop(Boc)-OMe $\cdot$ HCl
F-2985	H-4,5-Dehydro-Letu-OH
F-2970	H-trans-4,5-Dehydro-Lys-OH [DL-trans-2,6-Diamino-4-hexenoic acid]
F-1490	H-3,4 Dehydro-Pro-OH
F-2705	H-3,4-Dehydro-DL-Pro-OH
F-1495	H-3,4-Dehydro-Pro-NH <sub>2</sub> $\cdot$ HCl
F-1500	H-3,4-Dehydro-Pro-OMe $\cdot$ HCl
F-1505	2,6-Diaminopimelic (LL,DD and Meso) [2,6-Diaminoheptanedioic acid]
F-1510	H-6-Diazo-5-oxo-Nle-OH [L-DON]
F-2185	H-6-Diazo-5-oxo-D-Nle-OH [D-DON]

Fig. 1L

## REPLACEMENT SHEET

13/24

F-1520	H-3,5-Dibromo-Tyr-OH
F-3395	H-3,4-Dichloro-Phe-OH
F-3400	H-3,4-Dichloro-D-Phe-OH
F-3695	H- $\beta$ , $\beta$ , Dicyclohexyl-DL-Ala-OH
F-2395	H- $\alpha$ -Difluoro-Me-DL-Orn-OH [DFMO]
F-1525	H- $\beta$ -(3,4-Dihydroxyphenyl)-DL-Ser-OH [DL-Threo-DOPS]
F-3460	H-2,5-Diiodo-His-OH · HCL
F-2225	H-3,5-Diiodo-Tyr-OH
F-3005	H-3,5-Diiodo-D-Tyr-OH
E-2385	H-3,5-Diiodo-Tyr-OMe · HCL
M-1925	FA-Cys(farnesyl)-OH
M-1920	FA-Cys(farnesyl)-OMe
F-2530	H- $\beta$ -Fluoro-DL-Ala-OH
F-3285	H-m-Fluoro-Phe-OH
F-3290	H-m-Fluoro-D-Phe-OH
F-2135	H-m-Fluoro-DL-Phe-OH
F-1530	H-p-Fluoro-Phe-OH
F-2320	H-p-Fluoro-D-Phe-OH
F-1535	H-p-Fluoro-DL-Phe-OH
F-3820	H-p-Fluoro-Phe-OEt · HCL
F-3295	H-m-Fluoro-D-Phe-OMe · HCL
F-1540	H-p-Fluoro-DL-Phe-OMe · HCL
B-1780	Fmoc-Abu-OH
B-2920	Fmoc-D-Abu-OH
B-1910	Fmoc- $\gamma$ -Abu-OH

Fig. 1M

14/24

B-3260	Fmoc-Abz-OH
B-2985	Fmoc-4-Abz-OH
B-1860	Fmoc-Aib-OH
B-2880	Fmoc-allo-Ile-OH
B-2230	Fmoc-D-allo-Ile-OH
B-3100	Fmoc-allo-Thr-OH
B-3090	Fmoc-D-allo-Thr-OH
B-1815	Fmoc-allo-Thr(tBu)-OH
B-1810	Fmoc-allo-Thr(tBu)-Odhbt
B-3280	Fmoc- $\alpha$ -allyl-DL-Gly-OH [Fmoc-DL-2-amino-4-pentanoic acid]
B-2440	Fmoc-L- $\alpha$ -aminoadipic acid- $\delta$ -t-butyl ester [Fmoc-L-2-aminohexanedioic acid- $\delta$ -t-butyl ester]
B-1560	Fmoc- $\epsilon$ -aminocaproic acid
B-3310	2-(Fmoc-amino)-3-(2,2-dimethyl-4H-benzol[1,3]dioxin-6-yl)-propionic acid
B-2070	Fmoc-p-amino-Phe-OH
B-1995	Fmoc-p-amino-Phe-(Boc)-OH
B-2930	Fmoc-p-amino-D-Phe-(Boc)-OH
B-2360	Fmoc-p-azido-Phe-OH
B-2830	Fmoc- $\beta$ -(3-benzothienyl)-Ala-OH
B-3320	Fmoc-p-tBu-Phe-OH
B-3325	Fmoc-p-tBu-D-Phe-OH
B-2220	Fmoc-p-Bz-Phe-OH [Fmoc-Bpa-OH]
B-2340	Fmoc-p-Bz-D-Phe-OH [Fmoc-D-Bpa-OH]
B-3070	Fmoc-p-carboxy-Phe(OtBu)-OH
B-2115	Fmoc-p-chloro-Phe-OH

Fig. 1N

## REPLACEMENT SHEET

15/24

B-1900	Fmoc-p-chloro-D-Phe-OH
B-3125	Fmoc-p-cyano-Phe-OH
B-1975	Fmoc- $\beta$ -cyclohexyl-Ala-OH
B-2345	Fmoc- $\beta$ -cyclohexyl-D-Ala-OH
B-3270	Fmoc-cyclohexyl-Gly-OH
B-3275	Fmoc-cyclohexyl-D-Gly-OH
B-2905	Fmoc- $\beta$ -cyclopropyl-Ala-OH
B-3120	Fmoc-Cys(Boc-3-aminopropyl)-OH
B-2300	Fmoc-Dab-OH
B-2365	Fmoc-D-Dab-OH
B-2860	Fmoc-Dab(Adpoc)-OH
B-2850	Fmoc-Dab(aloc)-OH
B-1800	Fmoc-Dab(Boc)-OH
B-2960	Fmoc-D-Dab(Boc)-OH
B-2270	Fmoc-D-Dab(Fmoc)-OH
B-3250	Fmoc-Dab(Z)-OH
B-2385	Fmoc-Dap-OH
B-3055	Fmoc-D-Dap-OH
B-2865	Fmoc-Dap(Adpoc)-OH
B-2845	Fmoc-Dap(Aloc)-OH
B-2380	Fmoc-Dap(Boc)-OH
B-2965	Fmoc-D-Dap(Boc)-OH
B-2995	Fmoc-Dap(Dnp)-OH
B-2265	Fmoc-Dap(Fmoc)-OH
B-2255	Fmoc-4,5-dehydro-Leu-OH
B-1660	Fmoc-3,4-dehydro-Pro-OH

Fig. 10

## REPLACEMENT SHEET

16/24

B-1275	Fmoc-3,5-dibromo-Tyr-OH
B-1285	Fmoc-3,5-Diiodo-Tyr-OH
B-3265	Fmoc-3,5,dinitro-Tyr-OH
B-2595	Fmoc-m-fluoro-Phe-OH
B-2835	Fmoc-p-fluoro-Phe-OH
B-3210	Fmoc-p-fluoro-D-Phe-OH
B-1550	Fmoc-p-fluoro-DL-Phe-OH
B-3130	Fmoc-Homoarg(Pmc)-OH
B-2250	Fmoc-Homocit-OH
B-2390	Fmoc-D-Homocit-OH
B-2405	Fmoc-Homocys(Trt)-OH
B-1535	Fmoc-Homophe-OH
B-2810	Fmoc-D-Homophe-OH
B-2285	Fmoc-Homopro-OH
B-2290	Fmoc-D-Homopro-OH
B-2750	Fmoc-p-iodo-Phe-OH
B-1740	Fmoc-3-iodo-Tyr-OH
B-3190	Fmoc-isonipecotic acid
B-2590	Fmoc-DL-Isoser-OH
B-3335	Fmoc-p-Me-Phe-OH
B-3330	Fmoc-p-Me-D-Phe-OH
B-2130	Fmoc-Met(O)-OH
B-1905	Fmoc-Met(O <sub>2</sub> )-OH
B-1965	Fmoc-1-Nal-OH
B-3020	Fmoc-D-1-Nal-OH
B-2100	Fmoc-2-Nal-OH

Fig. 1P



17/24

B-1950	Fmoc-D-2-Nal-OH
B-2690	Fmoc-m-nitro-p-hydroxy-Phe-OH [Fmoc-m-nitro-Tyr-OH]
B-1395	Fmoc-p-nitro-Phe-OH
B-2350	Fmoc-p-nitro-D-Phe-OH
B-2690	Fmoc-m-nitro-Tyr-OH [Fmoc-m-nitro-p-hydroxy-Phe-OH]
B-2425	Fmoc-Oic-OH [Fmoc-L-actahydroindole-2-carboxylic acid]
B-1885	Fmoc-Pen(Acm)-OH
B-1915	Fmoc-D-Pen(Acm)-OH
B-1545	Fmoc-D-Pen(Bzl)-OH
B-2315	Fmoc-Pen-(Trt)-OH
B-2320	Fmoc-D-Pen(Trt)-OH
B-3155	Fmoc-p-phenyl-Phe-OH [Fmoc- $\beta$ -(4-biphenyl)-Ala-OH; Fmoc-Bip-OH]
B-3160	Fmoc-p-phenyl-D-Phe-OH [Fmoc- $\beta$ -(4-biphenyl)-D-Ala-OH; Fmoc-D-Bip-OH]
B-3195	1-Fmoc-piperidine-4-Fmoc-amino-4-carboxylic acid [Fmoc-Pip(Fmoc)-OH]
B-3175	Fmoc-4-piperidylacetic acid [Fmoc-4-carboxymethyl-piperidine]
B-2005	Fmoc- $\beta$ -(3-pyridyl)-Ala-OH
B-2040	Fmoc- $\beta$ -(3-pyridyl)-D-Ala-OH
B-3165	Fmoc- $\beta$ -(2-quinolyl)-Ala-OH
B-3170	Fmoc- $\beta$ -(2-quinolyl)-D-Ala-OH
B-1665	Fmoc- $\beta$ -(2-thienyl)-Ala-OH
B-2120	Fmoc- $\beta$ -(2-thienyl)-D-Ala-OH
B-1920	Fmoc-Tic-OH
B-1925	Fmoc-D-Tic-OH

Fig. 1Q

## REPLACEMENT SHEET

18/24

B-2470	Fmoc-Tyr(PO <sub>3</sub> H <sub>2</sub> )-OH
B-1990	Fmoc-Tyr(PO <sub>3</sub> Me <sub>2</sub> )-OH
B-2275	Fmoc-D-Tyr(PO <sub>3</sub> Me <sub>2</sub> )-OH
E-2870	Glutaryl-Leu-OH · 2DCHA
G-4490	Hippuryl-Cys(2-aminoethyl)-OH [Bz-Gly-Cys(2-aminoethyl)-OH; BZ-Gly-4-thia-Lys-OH]
F-3815	H- $\alpha$ -Homoethyl-Gly-OH
F-2780	H-Homoarg-OH
F-2995	H-Homocit-OH
F-2735	H-D-Homocit-OH
F-1610	H-Homophe-OH
F-1615	H-D-Homophe-OH
F-1620	H-DL-Homophe-OH
F-1625	H-Homopro-OH
F-1630	H-D-Homopro-OH
F-2915	H-DL-Homopro-OH
F-2465	H-Homopro-OMe · HCl
F-3125	H-D-Homopro-OMe · HCl
F-3330	H-(2S,4S)- $\gamma$ -Hydroxy-Glu-OH
F-3335	H-(2S,4R)- $\gamma$ -Hydroxy-Glu-OH
Q-1420	o-Hydroxyhippuric acid [Salicyluric acid]
E-2655	p-Hydroxyhippuric acid
F-1650	H-DL- $\delta$ -Hydroxy-DL-Lys-OH · HCl
F-2335	H-DL- $\delta$ -Hydroxy-DL-Lys(Boc)-OH
F-3685	H- $\alpha$ -Hydroxy-nor-L-arginine [L-2-Amino-(4-2'-hydroxyguanidino) butyric acid]
F-2935	H-7-Hydroxy-Tic-OH

Fig. 1R

## REPLACEMENT SHEET

19/24

F-2990	H-7-Hydroxy-D-Tic-OH
F-1665	H-p-Iodo-Phe-OH
F-1670	H-p-Iodo-D-Phe-OH
F-1675	H-p-Iodo-DL-Phe-OH
F-3350	H-m-Iodo-Tyr-OH
F-1695	H-DL-Isoser-OH [H-DL- $\beta$ -Amino- $\alpha$ -hydroxypropionic acid]
F-1195	Lysinoalanine-2 HCl (diastereomeric mixture: LL + LD) H-Lys(DL-2-amino-2-carboxyethyl)-OH $\cdot$ 2HCl
F-1765	N-Me-Aib-OH
F-1760	N-Me-allo-Ile-Obzl $\cdot$ P-tosylate
F-1795	H- $\alpha$ -Me-DL-His-OH $\cdot$ 2HCl
Q-1585	Melphalan-methyl esler $\cdot$ 2HCl [H-p-Dl(2-chloroethyl)amino-Phe-OMe $\cdot$ 2HCl]
F-1800	H- $\alpha$ -Me-DL-Leu-OH
F-1780	N-Me-p-nitro-Phe-OH
E-3150	H- $\alpha$ -Me-Phe-OH
F-3115	H- $\alpha$ -Me-D-Phe-OH
F-1805	H- $\alpha$ -Me-DL-Phe-OH
F-2805	H- $\alpha$ -Me-DL-Phe-OMe $\cdot$ HCl
F-3780	H-p-Me-Phe-OH
F-3785	H-p-Me-D-Phe-OH
F-3440	H- $\alpha$ -Me-Pro-OH
F-3615	H-2-Mercapto-His-OH
F-3620	H-2-Mercapto-His-OMe
M-2345	H- $\beta$ -(7-Methoxycoumarin-4-yl)-Ala-OH [L-2-Amino-3-(7-methoxycoumarin-4-yl)-propionic acid]
F-3810	1-Methylaminocyclopropone-1-carboxylic acid

Fig. 1S

20/24

F-1815	H- $\gamma$ -Methylene-DL-Glu-OH
Q-1645	(2-Methyl-1-indolyl)acetic $\cdot$ DCHA
F-3180	S-Methyl-L-thiocitrulline $\cdot$ acetate
F-2945	H-Met(O)-OH
F-2895	H-Met(O <sub>2</sub> )-OH
F-1810	H- $\alpha$ -Me-DL-Trp-OH
F-2240	H- $\alpha$ -Me-DL-Trp-OMe
F-1820	H-1-Me-DL-Trp-OH
F-3535	H- $\alpha$ -Me-Val-OH
F-3540	H- $\alpha$ -Me-D-Val-OH
F-3355	H- $\alpha$ -Me-DL-Val-OH
F-2550	Myristoyl-Gly-OH
F-1840	H-1-Nal-OH
F-1845	H-D-1-Nal-OH
F-1850	H-DL-1-Nal-OH
F-1855	H-2-Nal-OH
F-1860	H-D-2-Nal-OH
F-1865	H-DL-2-Nal-OH
F-3710	H-2-Nal-Obzl $\cdot$ salt
F-1315	H-Neopentylgly-OH
F-1320	H-D-Neopentylgly-OH
F-1325	H-DL-Neopentylgly-OH
F-3340	H-m-Nitro-p-hydroxy-Phe-OH [H-m-Nitro-Tyr-OH]
F-1895	H-p-Nitro-Phe-OH
F-1900	H-p-Nitro-D-Phe-OH
F-1905	H-p-Nitro-DL-Phe-OH

Fig. 1T

## REPLACEMENT SHEET

21/24

F-1910	H-p-Nitro-Phe-OMe · HCl
F-3340	H-m-Nitro-Tyr-OH [H-m-Nitro-p-hydroxy-Phe-OH]
F-3105	H-Oic-OH [L-Octahydroindole-2-carboxylic acid]
F-2515	H-Pan-OH
F-3065	H-Pan(Trt)-OH
F-3645	H-β-Phenyl-Phe-OH [H-β-(4-Biphenyl)-Ala-OH; H-Bip-OH]
F-3650	H-p-Phenyl-D-Phe-OH [H-β-(4-Biphenyl)-D-Ala-OH; H-D-Bip-OH]
F-2040	H-Propargyl-Gly-OH
F-2900	H-D-Propargyl-Gly-OH
F-2860	H-DL-Propargyl-Gly-OH
F-2075	H-Propargyl-Gly-OMe · HCl
F-2825	H-β-(2-Pyridyl)-Ala-OH
F-2790	H-β-(2-Pyridyl)-D-Ala-OH
F-2825	H-β-(2-Pyridyl)-DL-Ala-OH
F-3195	H-β-(3-Pyridyl)-Ala-OH
F-2640	H-β-(3-Pyridyl)-D-Ala-OH
F-3705	H-β-(3-Pyridyl)-DL-Ala-OH
F-3655	H-β-(2-Quinolyl)-Ala-OH
F-3660	H-β-(2-Quinolyl)-D-Ala-OH
F-2030	H-Ser(PO <sub>3</sub> H <sub>2</sub> )-OH
F-2035	H-D-Ser(PO <sub>3</sub> H <sub>2</sub> )-OH
F-3365	H-Ser(SO <sub>3</sub> H)-OH
F-3370	H-D-Ser(SO <sub>3</sub> H)-OH

Fig. 1U

22/24

F-1220	Statine [(3S,4S)-4-Amino-3-hydroxy-6-methylheptanoic acid]
F-3665	L-4,5,6,7-Tetrahydro-1H-imidazo(4,5-c)pyridine-6-carboxylic acid
Q-1535	L-Thiozoldin-2-one-4-carboxlic acid [L-2-Oxothiozolidine-4-carboxlic acid]
F-2955	H- $\beta$ -(2-Thiozoly)-DL-Ala-OH
F-2110	H- $\beta$ -(2-Thienyl)-Ala-OH
F-2115	H- $\beta$ -(2-Thienyl)-D-Ala-OH
N-1150	H- $\beta$ -(2-Thienyl)-DL-Ala-OH
F-2120	H- $\beta$ -(2-Thienyl)-DL-Ser-OH
N-1195	DL-Thiorphan [(DL-3-Mercapto-2-benzylpropanoyl)-Gly-OH]
F-2460	L-Thyronine [H-p-(p-Hydroxypheonoxy)-Phe-OH]
F-2405	DL-Thyronine [H-p-(p-Hydroxyphenoxy)-DL-Phe-OH]
F-2580	H-Tic-OH
F-2585	H-D-Tic-OH
F-3310	H-D-Tic-OtBu · HCl
Q-1700	H-Tpi-OH [L-1,2,3,4-Tetrahydronorharman-3-carboxlic acid]
F-3225	H- $\beta$ -(1,2,4-Triazol-1-yl)-DL-Ala-OH
F-3670	H- $\beta$ -(Ureido)-Ala-OH [H- $\beta$ -((Aminocarbonyl)amino)-Ala-OH; L-Albizziine]
C-1260	Z-Abu-OH
C-3160	Z- $\gamma$ -Abu-OH
C-1265	Z-Abu-OSu
C-3350	Z-3-Abz-OSu
C-3680	Z-Aib-OH

Fig. 1V

23/24

C-3390	Z-allo-Thr(tBu)-OH · DCHA
C-3385	Z-L- $\alpha$ -aminoadipic acid [Z-L-2-aminohexanedioic acid]
C-3790	Z-L-2-aminoadipic acid- $\delta$ -t-butyl ester · DCHA [Z-L-2-aminohexanedioic acid]- $\delta$ -t-butyl ester · DCHA]
C-1270	Z- $\epsilon$ -aminocaproic acid
C-3975	Z-p-carboxy-Phe(OtBu)-OH
C-3920	Z- $\beta$ -cyclohexyl-D-Ala-OH · DCHA
C-3705	Z-Dob-OH
C-3770	Z-D-Dob-OH
C-3510	Z-Dob(Boc)-OH · DCHA
C-3765	Z-D-Dob(Boc)-OH · DCHA
C-3690	Z-Dob(Z)-OH
C-3315	Z-Dop-OH
C-3755	Z-D-Dop-OH
C-3685	Z-Dop(Boc)-OH · DCHA
C-3760	Z-D-Dop(Boc)-OH
C-3695	Z-Dop(Z)-OH
C-1535	Z-dehydro-Ala-OH
C-1540	Z-dehydro-Ala-OMe
C-3525	Z-p-fluoro-Phe-OH
C-3965	Z-D-Homocit-OH [Z- $\alpha$ -amino- $\epsilon$ -uneidocaproic acid]
C-1275	Z-Homophe-OH
C-1280	Z-D-Homophe-OH
C-3010	Z-1-Nal-OH
C3950	Z-D-1-Nal-OH
C-3500	Z-2-Nal-OH

Fig. 1W

# REPLACEMENT SHEET

24/24

C-2255	Z-D-2-Nal-OH
C-2260	Z-Neopentylgly-OH • DCHA
C-2265	Z-D-Neopentylgly-OH
C-4030	Z-p-phenyl—Phe-OH [Z-β-(4-biphenyl)-Ala-OH; Z-Bip-OH]
C-4035	Z-p-phenyl-D-Phe-OH [Z-β-(4-biphenyl)-D-Ala-OH; Z-D-Bip-OH]
C-3870	Z-D-Tic-OH

Fig. 1X